217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT
"REVISED"

PERMITTEE

Good Samaritan Hospital
Attn: Joe Kybartas
3815 Highland Avenue
Downers Grove, Illinois 60515

Application No.: 83070043 I.D. No.: 043030ADQ
Applicant's Designation: BOILERS123 Date Received: May 24, 2000
Subject: Type 7 Waste Incinerator/Boilers
Date Issued: July 28, 2000 Expiration Date: November 17, 2000
Location: 3815 Highland Avenue, Downers Grove

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of three Cleaver Brooks gas fired boilers with distillate fuel oil backup, one Econotherm incinerator with heat recovery boiler, and three ethylene oxide sterilizers pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. This federally enforceable state operating permit is issued to limit the emissions of nitrogen oxides (NO_x) and hazardous air pollutants (HAPs) from the source to less than major source thresholds, i.e. NO_x to less than 25 tons per year, and HAPs to less than 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, as further described in Attachment A. As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program permit.

b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

c. This permit supersedes the current permit(s) issued for this location.

2a. Operation of the boilers shall not exceed the following limits:

i. Natural gas usage: 1,152 therms/hr and 2,600,000 therms/year.

ii. Natural combustion emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO_2), and particulate matter (PM):

Pollutant	Fuel Usage (Therms/Hr)(Therms/Yr)	Emission Factor (Lb/Therm)	Emissions (Lbs/Hr)(T/Yr)

NO_x	1,152	2,600,000	0.0140	16.13	18.20
CO			0.0035	4.04	4.55
VOM			0.0003	0.35	0.39
SO_2			0.0001	0.12	0.13
PM			0.0014	1.62	1.82
				Total	25.09

iii. No. 2 fuel oil usage: 30,000 gallons/year.

iv. No. 2 fuel oil combustion emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO_2) and particulate matter (PM):

Pollutant	Fuel Usage (Gallons/Yr)	Emission Factor (Lb/Gallon)	Emissions (Ton/Yr)
NO_x	30,000	0.0200	0.30
CO		0.0050	0.08
VOM		0.0020	0.03
SO_2		0.0002	0.01
PM		0.0398	0.60
		Total	1.02

v. These limits define the potential emissions of nitrogen oxides from the boilers and are based on the actual emissions determined from the maximum capacity and standard emission factors.

b. Operation of the incinerator shall not exceed the following limits:

i. Only Type 7 Waste (general hospital waste) may be incinerated and at a rate not to exceed 900 lbs/hour and 1,450 tons/year. Of the total charge fed to the incinerator no more than 10% may be potentially infectious medical waste (PIMW). The permit does not allow the burning of any PIMW alone.

ii. The afterburner combustion chamber shall be preheated to the manufacturer's recommended temperature but not lower than 1400 degrees F, before any waste is loaded into the incinerator, and this temperature shall be maintained during incineration.

iii. Type 7 waste incineration emissions of nitrogen oxide (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO_2), and particulate matter (PM), and hydrogen chloride (HCl):

Pollutant	Waste Feed Rate (Lbs/Hr)	(Tons/Yr)	Emission Factor (Lbs/Ton)	Emissions (Lbs/Hr)	(Tons/Yr)
NO_x	900	1,450	4.95	2.23	3.60
CO			3.86	1.74	2.80
PM			4.67	2.11	3.40
VOM			0.30	0.14	0.22
SO_2			2.17	0.98	1.58

HCl	5.00	2.25	3.63
		Total	15.23

iv. These limits define the potential emissions of nitrogen oxides and hydrogen chloride and are based on the actual emissions determined from the maximum capacity and standard emission factors. The hydrogen chloride emission factor is based on the actual emissions determined from a stack test.

c. Operation of the three ethylene oxide sterilizers shall not exceed the following limits:

i. Ethylene Oxide Gas Usage: 0.5 tons/month and 5.0 tons per year.

ii. Emissions of ethylene oxide:

	Material Usage		Emissions	
Material	(Tons/Mo)	(Tons/Yr)	(Tons/Mo)	(Tons/Yr)
Ethylene Oxide	0.5	5.0	0.5	5.0

iii. These limits define the potential emissions of the ethylene oxide sterilizers and are based on the actual emissions determined from the maximum capacity.

d. At the above location, the Permittee shall not keep, store, or utilize distillate fuel oil (Grades No. 1 and No. 2) with a sulfur content greater than the larger of the following values:

i. 0.28 weight percent, or

ii. The wt. percent given by the formula:

Maximum wt. percent sulfur = (0.000015) x (Gross heating value of oil, Btu/lb).

e. The emissions of HAPs as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish by rule which would require the Permittee to obtain a Clean Air Act Permit Program permit from the Agency. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a Clean Air Act Permit Program permit from the Agency.

f. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

3a. Within 90 days of a written request from the Agency, pursuant to 35 Ill Adm. Code Section 201.282, the emissions and opacity of the boilers and the incinerator exhaust from the plant shall be measured by an approved testing service, during conditions which are representative of the maximum performance. The Agency may provide additional time for the performance of this testing upon request from the Permittee which shows that it is not feasible to perform representative testing within 90 days.

b. i. The following methods and procedures shall be used for testing of emissions. Refer to 40 CFR 60, Appendix A for USEPA test methods.

Opacity	USEPA Method 9
Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Particulate Matter	USEPA Method 5
Nitrogen Oxide	USEPA Method 7
Carbon Monoxide	USEPA Method 10
Hydrogen Chloride	USEPA Method 26 (Incinerator Only)

ii. A test shall consist of three separate runs each at least 60 minutes in duration. Compliance shall be determined from the average of the runs provided that the Agency may accept the arithmetic mean of the two runs in circumstances described in 40 CFR 60.8(f).

c. Testing shall be performed by a qualified independent testing service.

d. At least 30 days prior to the actual date of testing a written test plan shall be submitted to the Agency for review and approval. A copy shall also be submitted to the USEPA. This plan shall describe the specific procedures for testing, including:

i. The person(s) who will be performing sampling and analysis and their experience with similar tests.

ii. The conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum operating rate, the levels of operating parameters at or within which compliance is intended to be shown, if applicable, and the means by which the operating parameters for the process and any control equipment will be determined.

e. The Agency shall be notified prior to these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the

expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the tests. The Agency may, at its discretion, accept notification with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe the testing.

4a. The Permittee shall maintain records of the following items for the source:

i. The use of natural gas in the boilers, therms/month and therms/year (tunning total);

ii. The use of No. 2 fuel oil in the boilers, gallons/month and gallons/year (running total);

iii. The amount and type of waste incinerated, lbs/hr, tons/day and tons/year (running total);

iv. Daily records of the incinerator afterburner combustion chamber temperature;

v. The amount of ethylene oxide gas used in the sterilizers, tons/month and tons/year (running total).

b. The Permittee shall maintain records for any deviation or exceedance from the requirements of this permit, as determined by the above records or by other means, with date, time, duration, description, corrective action and measures to prevent future reoccurrences.

5. All records required by this permit shall be retained at a readily accessible location at the source for at least 3 years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request.

6. If there is an exceedance of the requirements of this permit as determined by the record required by this permit, the Permittee shall submit a report to the Agency's Compliance and Systems Management Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences. This report should be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section
P.O. Box 19276
Springfield, IL 62794-9276

7. The incinerator shall be equipped with a temperature indicator for afterburner combustion chamber temperature.

8a. The Final Report(s) for all tests shall be submitted within 180 days after the date of the test. The Final Report shall include as a minimum:

i. General information describing the test, including the name and identification of the emission source which was tested, date of test, names of personnel performing the tests, and Agency observers, if any;

ii. A summary of results;

iii. Description of test procedures, including description of sampling points, test equipment, and test schedule;

iv. Detailed description of test conditions, including:

A. Process information, i.e., process rate, aggregate type, fuel type, and firing rate.

B. Control equipment information, i.e., equipment condition and operating parameters during testing.

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

b. Submittals of information shall be made as follows:

i. Notices of Test - one copy to Source Emission Test Specialist and one copy to the Regional Office.

ii. Final Report - one copy to Source Emission Test Specialist, one copy to the Regional Office, and one copy to Permit Section.

Illinois Environmental Protection Agency
Division of Air Pollution Control - Regional Office
1701 South First Avenue
Maywood, Illinois 60153

Illinois Environmental Protection Agency
Attn: Source Emission Test Specialist
Division of Air Pollution Control
1701 South First Avenue
Maywood, Illinois 60153

9. The Permittee shall submit the following additional information for the prior calendar year with the Annual Emissions Report, due May 1st of each year:

   a. Natural gas usage (therms/year),

   b. No. 2 fuel oil usage (gallons/year),

   c. The amount of waste incinerated (tons/year), and

   d. Ethylene oxide gas usage (tons/year).

10a. Organic liquid by-products or waste materials shall not be used at this source without written approval from the Agency.

  b. The Permittee shall notify the Agency prior to any change in the type of fuel used at the source.

11. This permit contains the federally enforceable conditions from construction permit(s) 00050079. These conditions effectively limit the potential emissions of air pollutants from the source to less than major source thresholds (i.e., ethylene oxide to less than 10 tons per year, etc.). As a result, the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit.

If you have any questions on this, please call Jim Cobb at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JDC:jar

cc: Region 1

Attachment A - Emissions Summary

1a. Natural gas combustion emissions of nitrogen oxide (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO_2), and particulate matter (PM) from the boilers:

Pollutant	Fuel Usage (Therms/Hr)	Fuel Usage (Therms/Yr)	Emission Factor (Lb/Therm)	Emissions (Lbs/Hr)	Emissions (Ton/Yr)
NO_x	1,152	2,600,000	0.0140	16.13	18.20
CO			0.0035	4.04	4.55
VOM			0.0003	0.35	0.39
SO_2			0.0001	0.12	0.13
PM			0.0014	1.62	1.82
				Total	25.09

b. No. 2 fuel oil combustion emissions of nitrogen oxide (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO_2) and particulate matter (PM) from the boilers:

Pollutant	Fuel Usage (Gallons/Yr)	Emission Factor (Lb/Gallon)	Emissions (Ton/Yr)
NO_x	30,000	0.0200	0.30
CO		0.0050	0.08
VOM		0.0020	0.03
SO_2		0.0002	0.01
PM		0.0398	0.60
		Total	1.02

c. These tables define the potential emissions of the boilers and are based on the fuel fired and standard emission factors at the maximum annual fuel usage.

2. Type 7 waste incineration emissions of nitrogen oxide (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO_2), particulate matter (PM), and hydrogen chloride (HCl) from the incinerator:

Pollutant	Waste Feed Rate (Lbs/Hr)	Waste Feed Rate (Tons/Year)	Emission Factor (Lbs/Ton)	Emissions (Lbs/Hr)	Emissions (Ton/Yr)
NO_x	900	1,450	4.95	2.23	3.60
CO			3.86	1.74	2.80
PM			4.67	2.11	3.40
VOM			0.30	0.14	0.22
SO_2			2.17	0.98	1.58
HCl			5.00	2.25	3.63
				Total	15.23

This table defines the potential emissions of the incinerator and are based on the type of waste incinerated and standard emission factors at the maximum annual waste feed rate. The hydrogen chloride emission factor is based on the actual emissions determined from a stack test.

3. Emissions and operation of ethylene oxide sterilizer shall not exceed the following limits:

Material	Material Usage (Tons/Month)	Material Usage (Tons/Year)	Emissions (Tons/Month)	Emissions (Tons/Year)
Ethylene Oxide	0.5	5.0	0.5	5.0

This table defines the potential emissions of volatile organic material and is based on the amount of ethylene oxide gas usage indicated in the permit application.

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